

REMARKS

The application includes claims 1-15 and 17-23. Claims 1, 5, 9, 10, 11, 17 are amended above. As to the amendments to claim 1, see, e.g., Applicants' specification at page 9, line ~24 and page 3, line 5 and Fig. 3. Claim 5 is rewritten in independent form including the amendments presently made to base claim 1. As to new claim 18, see, e.g., Fig. 3. As to new claim 19, see, e.g., Applicants' specification at page 10, lines 1-5.

Applicants' undersigned representative thanks the Examiner and the Supervisory Examiner for the telephone interview dated 15 February 2011. As to the substance of the interview, we adopt (1) the Interview Request form with attached pages that we provided on 15 February 2011 in advance of the interview and (2) the Examiner's Interview Summary mailed 18 February 2011.

Claims 1, 3, 4, 7, 8, 11, 13, 14, 17 have been rejected under 35 U.S.C. 102(e) as being anticipated by Sevick-Muraca et al. (US 7,328,059).

Applicants respectfully traverse this anticipation rejection.

Sevick-Muraca omits to teach use of a bolus form of a dye.

Further, there are no time periods on the order of seconds disclosed in Sevick-Muraca, and to the contrary, the only time periods disclosed in Sevick-Muraca et al are very much shorter, on the order of nanoseconds or milliseconds. (Col. 3, lines 25-27; col. 4, lines 32-36, 55, 62; col. 5, lines 2, 9; col. 11, lines 3, 6; col. 13, lines 60-62; col. 14, lines 31-37) Also Sevick-Muraca omits to teach "at multiple times during the transit time of the dye bolus, determining the flight time during transit of the dye bolus through the tissue" as in Applicants' claim 1. Quite differently, in Sevick-Muraca all that is performed is a snapshot at one point in time.

Reconsideration and withdrawal of this anticipation rejection are respectfully sought.

Claims 2 and 12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sevick-Muraca in view of Kessler et al. (US 5,610,932).

Applicants respectfully traverse this obviousness rejection.

Applicants' claimed invention is more removed from Sevick-Muraca as is set forth above regarding the base claim. These differences are significant, and the claimed invention would not have been obvious to a person of ordinary skill in the art at the time of the invention. The person of ordinary skill in the art takes note that Sevick-Muraca's work is devoted to image contrast by applying contrast agents that show preferential uptake in diseased tissue (e.g. tumors). Her aim is to detect and map spatial variations of fluorescence

characteristics. She does not mention any recording of kinetics of uptake and washout of the dye in macrotime, but rather she considers a stationary dye concentration.

For one thing, a person of ordinary skill in the art would lack motivation to modify Sevick-Muraca in a direction of using a bolus form of a dye. If the person of ordinary skill in the art wanted to work with a dye bolus, he would work with existing dye bolus technology such as Boas (US 6,516,214) which expressly uses a bolus of dye (Boas, col. 8, line 34). To such a person reading Sevick-Muraca -- such as Sevick-Muraca's Fig. 1 in which the heterogeneities 102, 103 in the tissue 100 are at similar depth and moreover close to the tissue's surface 101 -- there would not seem to be any natural reason that he would want to change in a direction of using a bolus form of a dye which, if anything, would seem unsuited to use in Sevick-Muraca's arrangement of multiple detectors detecting data that is then plotted in a form of a two-dimensional grid (such as a 17x17 or 33x33 grid) which is a plot of x versus y based on data from the plurality of detectors positioned in different places.

Also, the person of ordinary skill in the art would lack motivation to modify Sevick-Muraca which is a static approach in a direction of multiple measurements over a period of seconds. To repeat the detection multiple times over a period of seconds would seem completely unnecessary and duplicative to a person of ordinary skill in the art reading Sevick-Muraca, because he would see that an (x,y) plot such as a 17x17 or 33x33 grid was already produced at one point in time and there would be no reason to want to re-do that kind of grid within the next few seconds.

Applicants' inventive approach is simply too far removed from Sevick-Muraca and would have been non-obvious to a person of ordinary skill in the art at the time of Applicants' invention. Reconsideration and withdrawal of the obviousness rejection based on Sevick-Muraca combined with Kessler are respectfully sought.

Claim 9 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Sevick-Muraca in view of Boas (US 6,516,214).

Applicants respectfully traverse this obviousness rejection.

As has been set forth above, the base claim is more removed from Sevick-Muraca than was admitted in the office action. In a case where a person of ordinary skill is wanting to examine a brain, he would not logically start with Sevick-Muraca because the case of brain imagery would not match well with Sevick-Muraca's Fig. 1 in which the tissue parts 102, 103 that are of interest are relatively close to the tissue's surface 101. Problematically when brain tissue is being examined there is bone and skin in the way which are complicating factors that

make Sevick-Muraca's approach unworkable in that case of brain study.

For a person of ordinary skill in the art wanting to perform brain study, it would be more logical for him to use Boas and the like as his starting point for design of a brain imagery detection system and in that particular case to be uninfluenced by Sevick-Muraca (although he might be duly influenced by Sevick-Muraca in another, different case such as imaging where skin is the tissue to be studied). Boas describes a method to monitor cerebral perfusion by means of a bolus of an optical contrast agent (which has been known for a long time in the literature). Boas describes the recording of the bolus transit.

However, please note that in Boas, the person of ordinary skill in the art finds no disclosure of a time resolution of the flight time as in Applicants' claim 1. Boas, relying on continuous (cw) light, does not consider time resolution (on the microtime scale).

To a person of ordinary skill of art at the time of Applicants' invention, Sevick-Muraca and Boas are too different to be combinable in the first instance. Moreover, even with the two references, still the person of ordinary skill in the art would have fallen short of Applicants' claimed invention of claim 1, and claim 9.

Wherefore, reconsideration and withdrawal of the obviousness rejection based on Sevick-Muraca combined with Boas are respectfully sought.

Claim 10 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Sevick-Muraca in view of Zhao et al. (US 2003/0031628). Claims 5, 6, and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sevick-Muraca in view of Folestad et al. (US 6,794,670).

Applicants respectfully traverse these obviousness rejections, and incorporate by reference their above remarks regarding non-obviousness. For relative brevity, we do not comment separately at this time on these claims. Reconsideration and withdrawal of these obviousness rejections are respectfully sought.

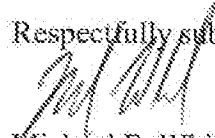
In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-15 and 17-23 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such

provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Michael E. Whitham', is written over the typed name.

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